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APR 16 1968

CURRENT SERIAL RECORDS

WATER SUPPLY OUTLOOK FOR WASHINGTON

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE.

and
DEPARTMENT of WATER RESOURCES STATE of WASHINGTON

Data included in this report were obtained by the agencies named above in cooperation with the U.S. Forest Service, U.S. Geological Survey, National Park Service, and other Federal, State and Private organizations.

AS OF
APR. 1, 1968

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season as they affect runoff will add to be an effective average. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

PUBLISHED BY SOIL CONSERVATION SERVICE

D. A. WILLIAMS, Administrator

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 507, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85205
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	P. O. Box 38, Boise, Idaho 83707
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Building, Salt Lake City, Utah 84111
Washington	360 Federal Office Building, Spokane, Washington 99201
Wyoming	P. O. Box 340, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR WASHINGTON

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

D.A. WILLIAMS

ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.

Released by

ORLO W. KRAUTER

STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
SPOKANE, WASHINGTON

In Cooperation with

H. MAURICE AHLQUIST

DIRECTOR
DEPARTMENT OF WATER RESOURCES
STATE OF WASHINGTON

Report prepared by

ROBERT T. DAVIS, Snow Survey Supervisor

SOIL CONSERVATION SERVICE
360 U.S. COURTHOUSE
SPOKANE, WASHINGTON 99201

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INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.									
UPPER COLUMBIA DRAINAGE																										
Pend Oreille River																										
Boyer Mountain	1742	7	31N	43E	5250	Squillchuck Creek												Lewis River (continued)								
Bunchgrass Meadow	1741	24	37N	44E	5000	2083	12	21N	19E	4400	2084	18	21N	20E	3400	21C29a	21	9N	10E	5600						
Winchester Creek	1743	30	33N	43E	2970	Stemilt Creek												Skagit River								
Kettle River																										
Boulder Road	1842	36	39N	36E	1450	2088	34	21N	20E	4450	Lone Pine Shelter												Beaver Creek Trail			
Butte Creek	1843	28	39N	32E	4070	2087PM	30	21N	20E	4400	New Muddy River												Beaver Pass			
Cabin Creek	1845	3	38N	36E	3170	2087PM	30	21N	20E	4400	Olmman Pass												Devils Park			
East Creek	1844	26	39N	36E	3595	2087PM	30	21N	20E	4400	Plains of Abraham												Freezeout Creek Trail			
Snow Caps Creek	1842	3	38N	32E	2150	2087PM	30	21N	20E	4400	Smith Creek Road												Freezeout Meadows			
Snow Caps Trail	1845	5	38N	36E	2720	2087PM	30	21N	20E	4400	Spencer Meadow												Lake Horzomen			
Summit C. S.	1847	20	39N	36E	4600	2087PM	30	21N	20E	4400	Surprise Lakes												Meadows Cabins			
Colville River																		Thunder Basin								
Baird	1746	19	36N	42E	3215	2087PM	30	21N	20E	4400	Timbered Peak												20A7			
Carlson	1849	34	32N	38E	2885	2087PM	30	21N	20E	4400	Cayuse Pass												Baker River			
Chevelah	1745	26	31N	36E	4320	2087PM	30	21N	20E	4400	Mosquito Meadows												21A11A			
Stranger Mountain	1745	26	31N	36E	4320	2087PM	30	21N	20E	4400	Onanaposh Lake												21A7A			
Togo	1840	6	29N	36E	3370	2087PM	30	21N	20E	4400	Paganat Park												21A6A			
Sonpoil River																		21D18a								
Sherman Creek Pass	1841	19	36N	36E	5350	2087PM	30	21N	20E	4400	Paco Hill												21A9A			
Okonagon River																		21C13A								
Clark	1948a	2	36N	23E	7000	2087PM	30	21N	20E	4400	Willame Creek												21A18a			
Muckamuck	1949a	20	36N	24E	6750	2087PM	30	21N	20E	4400	Geyser Pass												21A12a			
Mutton Creek No. 1	1941	30	37N	24E	5700	2087PM	30	21N	20E	4400	Mosquito Meadows												21A10a			
Mutton Creek No. 2	1941	19	37N	24E	6000	2087PM	30	21N	20E	4400	Onanaposh Lake												21A12a			
Payson	1942a	32	40N	18E	4300	2087PM	30	21N	20E	4400	Paganat Park												21A10a			
Payson	1943P	18	35N	24E	4000	2087PM	30	21N	20E	4400	Paco Hill												21A12a			
Rusty Creek	1943P	18	35N	24E	4000	2087PM	30	21N	20E	4400	Willame Creek												21A12a			
Salmon Meadows	1942PM	33	37N	24E	4500	2087PM	30	21N	20E	4400	Geyser Pass												21A12a			
Starvation Mtn.	19410a	15	35N	23E	6750	2087PM	30	21N	20E	4400	Mosquito Meadows												21A10a			
Touta Coulee	1946	30	39N	25E	2845	2087PM	30	21N	20E	4400	Onanaposh Lake												21A12a			
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Billy Goat Pass	20410a	10	38N	20E	6400	2087PM	30	21N	20E	4400	Paganat Park												21A10a			
Dollar Match	20429a	8	39N	20E	7000	2087PM	30	21N	20E	4400	Paco Hill												21A12a			
Harts Pass	2045A	7	37N	18E	6500	2087PM	30	21N	20E	4400	Willame Creek												21A12a			
Horseshoe Basin	1945a	15	40N	23E	7000	2087PM	30	21N	20E	4400	Geyser Pass												21A12a			
Loup Loup	1947	36	34N	23E	4650	2087PM	30	21N	20E	4400	Mosquito Meadows												21A10a			
Chelon Lake Bosin																		21C13A								
Cloudy Pass	20422a	12	31N	15E	6500	2087PM	30	21N	20E	4400	Paganat Park												21A10a			
Greenwood Flat	20425a	3	31N	16E	3540	2087PM	30	21N	20E	4400	Paco Hill												21A12a			
Little Meadows	20424a	8	31N	16E	5275	2087PM	30	21N	20E	4400	Willame Creek												21A12a			
Lyman Lake	20424a	18	31N	16E	5900	2087PM	30	21N	20E	4400	Geyser Pass												21A12a			
Park Creek Flat	20413a	18	34N	16E	2220	2087PM	30	21N	20E	4400	Mosquito Meadows												21A10a			
Park Creek Ridge	20412a	7	34N	16E	4600	2087PM	30	21N	20E	4400	Onanaposh Lake												21A12a			
Petersons	20412a	3	34N	17E	3730	2087PM	30	21N	20E	4400	Paganat Park												21A10a			
Rainy Pass	2049	21	35N	17E	4780	2087PM	30	21N	20E	4400	Paco Hill												21A12a			
Safety Harbor	20430a	32	31N	20E	6300	2087PM	30	21N	20E	4400	Willame Creek												21A12a			
War Creek Pass	20431a	34	33N	18E	6500	2087PM	30	21N	20E	4400	Geyser Pass												21A12a			
Entiat River																		21C13A								
Brief	20419	34	28N	19E	1600	2087PM	30	21N	20E	4400	Paganat Park												21A10a			
Entiat Meadows	20432a	28	31N	17E	4800	2087PM	30	21N	20E	4400	Paco Hill												21A12a			
Entiat River Trail	20434a	2	29N	17E	3150	2087PM	30	21N	20E	4400	Willame Creek												21A12a			
Fox Camp	20436a	17	30N	18E	6510	2087PM	30	21N	20E	4400	Geyser Pass												21A12a			
Pope Ridge	20420	22	29N	18E	4300	2087PM	30	21N	20E	4400	Mosquito Meadows												21A10a			
Pugh Ridge	20432a	34	30N	18E	6400	2087PM	30	21N	20E	4400	Onanaposh Lake												21A12a			
Snow Brushy	20435a	21	30N	18E	5300	2087PM	30	21N	20E	4400	Paganat Park												21A10a			
Tommy Creek	20421a	10	28N	15E	5300	2087PM	30	21N	20E	4400	Paco Hill												21A12a			
Wenatchee River																		21C13A								
Berne-Mill Creek	21B23	7	26N	15E	2925	2087PM	30	21N	20E	4400	Willame Creek												21A12a			
Berne-Mill Creek (New)	21B45P	13	26N	14E	3240	2087PM	30	21N	20E	4400	Geyser Pass												21A12a			
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Chinvaikum C. S.	20B16	4	25N	17E	1810	2087PM	30	21N	20E	4400	Onanaposh Lake												21A12a			
Lake Wenatchee	20B5	33	27N	17E	1970	2087PM	30	21N	20E	4400	Paganat Park												21A10a			
Leavenworth R. S.	20B17	1	24N	17E	1127	2087PM	30	21N	20E	4400	Paco Hill												21A12a			
Merritt	20B18	4	26N	16E	2140	2087PM	30	21N	20E	4400	Willame Creek												21A12a			
Stevens Pass	21B1	14	26N	13E	4070	2087PM	30	21N	20E	4400	Geyser Pass												21A12a			

LEGEND

NUMBERING SYSTEM EXAMPLE

21A7 SNOW COURSE ONLY

21A7a AERIAL MARKER ONLY

21A7b SNOW COURSE AND AERIAL MARKER

21A7c SNOW COURSE AND SOIL MOISTURE STATION

21A7d SNOW COURSE AND SOIL MOISTURE STATION

21A7e SNOW COURSE AND PRECIPITATION STORAGE GAGE

21A7f SNOW COURSE AND PRECIPITATION STORAGE GAGE

21A7g SNOW COURSE AND PRECIPITATION STORAGE GAGE

21A7h SNOW COURSE AND PRECIPITATION STORAGE GAGE

21A7i SNOW COURSE AND PRECIPITATION STORAGE GAGE

21A7j SNOW COURSE AND PRECIPITATION STORAGE GAGE

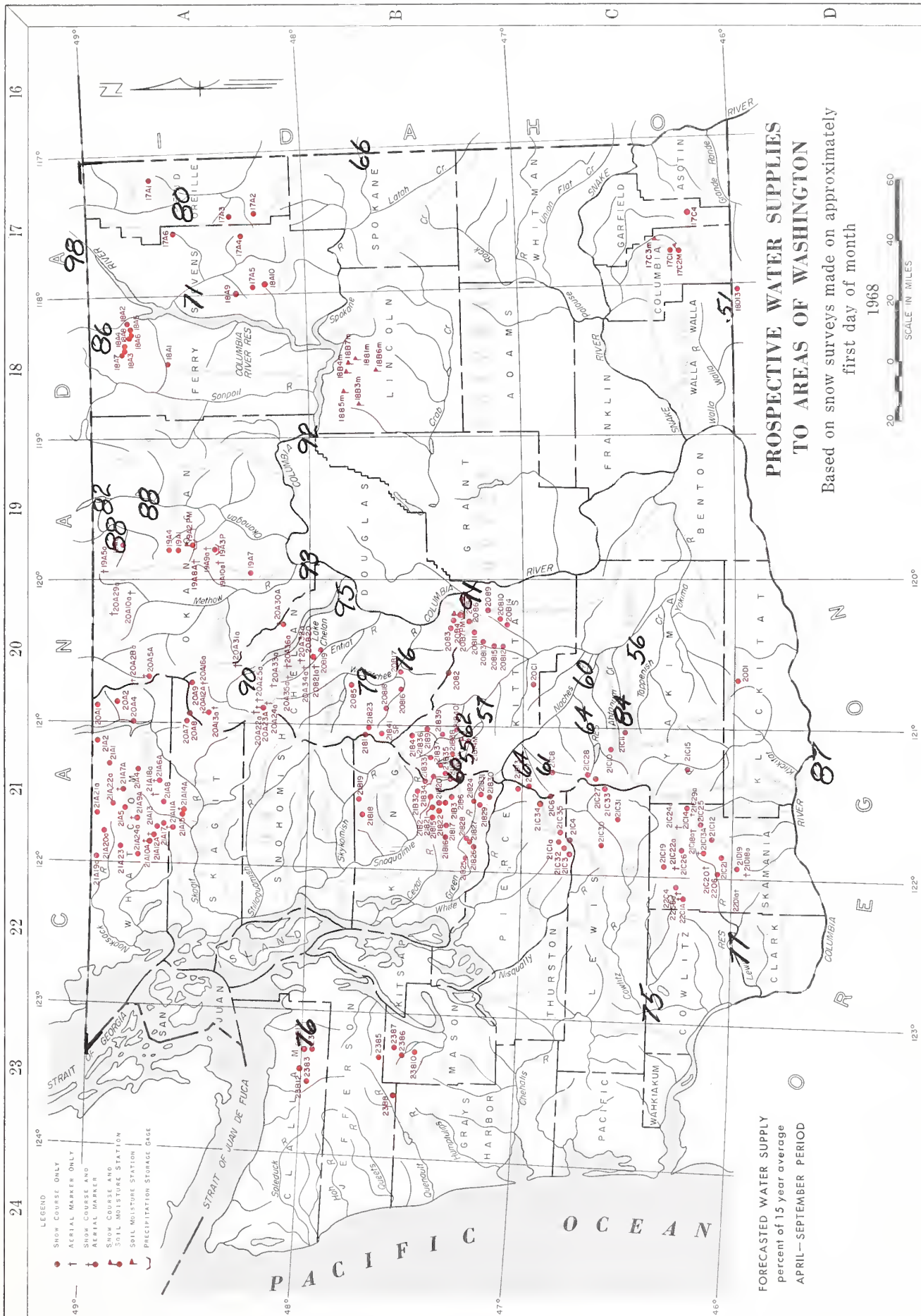
21A7k SNOW COURSE AND PRECIPITATION STORAGE GAGE

21A7l SNOW COURSE AND PRECIPITATION STORAGE GAGE

21A7m SNOW COURSE AND PRECIPITATION STORAGE GAGE

21A7n SNOW COURSE AND PRECIPITATION STORAGE GAGE

21A7o SNOW COURSE AND PRECIPITATION STORAGE GAGE



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NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.						
UPPER COLUMBIA DRAINAGE																							
Pend Oreille River																							
Boyer Mountain	17A2	7	31N	43E	5250													Skagit River					
Bunchgrass Meadow	17A1	24	37N	44E	5000													Beaver Creek Trail	21A4	35	39N	12E	2200
Winchester Creek	17A3	30	33N	43E	2970													Beaver Pass	21A1	9	39N	12E	3680
Kettle River																							
Boulder Road	18A2	36	39N	36E	1450													Devils Park	20A4	34	38N	16E	5900
Butte Creek	18A3	28	39N	35E	4070													Freezeout Creek Trail	20A1	14	40N	14E	5000
Cabin Creek	18A8	5	38N	36E	3170													Freezeout Meadows	20A2	8	40N	16E	5000
Coat Creek	18A4	26	39N	35E	3595													Lake Hazomeen	21A2	19	40N	14E	2600
Snow Caps Creek	18A5	3	38N	36E	2150													Meadows Cabins	20A8	29	36N	14E	1900
Snow Caps Trail	18A6	5	38N	36E	2720													Thunder Basin	20A7	15	35N	14E	4200
Summit C. S.	18A7	20	39N	35E	4600													Baker River					
Colville River																							
Baird	17A6	19	36N	42E	3215													Dock Butte	21A11A	8	36N	8E	3800
Carlson	18A9	34	32N	38E	2885													Easy Pass	21A7A	19	39N	11E	5200
Chevelah	17A4	11	32N	41E	4925													Jasper Pass	21A6A	17	38N	11E	5400
Stranger Mountain	17A5	26	31N	38E	4990													Marten Lake	21A9A	23	38N	8E	3600
Togo	18A10	6	29N	38E	3370													Mount Blum	21A18a	27	38N	10E	5800
Sanpoil River																							
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Okanogan River																							
Clark	19A8a	2	36N	23E	7000													Schreibers Meadow	21A10A	18	37N	8E	3400
Muckamuck	19A9a	20	36N	24E	6750													S. F. Thunder Creek	21A11A	20	36N	9E	2600
Nation Creek No. 1	19A1	30	37N	24E	5700													Sulphur Creek	21A13	22	37N	8E	1600
Nation Creek No. 2	19A4	19	37N	24E	6000													Three Mile Creek	21A15	18	36N	9E	3600
Payday Creek	20A28a	32	40N	18E	4300													Watson Lakes	21A18	25	37N	9E	4500
Rusty Creek	19A3P	18	35N	24E	4000													Naakack River					
Salmon Meadows	19A2PM	33	37N	24E	4500													Bald Mountain	21A19a	7	40N	7E	4400
Starvation Mtn.	19A10a	15	35N	23E	6750													Canyon	21A20A	20	40N	8E	5100
Touts Coulee	19A6	30	39N	25E	2845													Claciar Creek	21A23	9-10	38N	7E	3700
Methow River																							
Billy Goat Pass	20A10a	10	38N	20E	6400													Hannegan Pass	21A22a	8	39N	9E	5000
Dollar Watch	20A29a	8	37N	20E	7000													Hazama Park	21A24a	2	37N	7E	4500
Harris Pass	20A5a	13	40N	23E	7000													Phonotama	21A5	17	39N	9E	4300
Horseshoe Basin	19A5a	15	40N	23E	7000													Twin Lakes	21A21a	16	40N	9E	5200
Loup Loop	19A7	36	34N	23E	4650													OLYMPIC PENINSULA					
Chelon Lake Basin																							
Cloudy Pass	20A22a	12	31N	15E	6500													Dungeness River					
Greenwood Flat	20A25a	3	31N	16E	3540													Deer Park	23B4	1	28N	5W	5200
Little Meadows	20A24a	8	31N	16E	5275													Marse Creek					
Lynan Lake	20A23a	18	34N	16E	2220													Deer Park O. S.	23B13	1	28N	5W	4850
Park Creek Flat	20A13a	7	34N	16E	2240													Morse Creek	23B12	25	29N	7W	5425
Park Creek Ridge	20A12a	7	34N	16E	4600													Elwha River					
Petersons	20A16a	3	34N	17E	3730													Hurricane	23B3	36	29N	7W	4500
Rainy Pass	20A9	21	35N	17E	4780													Skakamish River					
Safety Harbor	20A30a	32	31N	20E	6300													Black and White	23B7	17	24N	5W	4200
War Creek Pass	20A31a	34	33N	18E	6500													Black and White Lakes	23B6	16	24N	5W	4700
Entiat River																							
Brief	20B19	34	28N	19E	1600													Four Stream	23B10	1	23N	6W	3000
Entiat Meadows	20A33a	28	29N	17E	4800													Home Sweet Home	23B5	28	25N	5W	5200
Entiat River Trail	20A34a	2	29N	17E	3150													Sundown Pass	23B8	25	24N	7W	3900
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Tommy Creek	20B21a	10	28N	18E	5300													21A7A	Snow Course and Aerial Marker				
Wenatchee River																							
Berne-Mill Creek	21B23	7	26N	15E	2925													21A7M	Snow Course and Soil Moisture Station				
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240													21A7M	Soil Moisture Station				
Blevett Pass No. 2	20B2	35	22N	17E	4270													21A7P	Snow Course and Precipitation Storage Gage				
Chiwaukum O. S.	20B16	4	25N	17E	1810													21A7S	Snow Pillow				
Lake Wenatchee	20B5	33	27N	17E	1970																		
Leavenworth R. S.	20B17	1	24N	17E	1127																		
Merritt	20B18	4	26N	16E	2140																		
Slevens Pass	21B1	14	26N	13E	4070																		

WATER SUPPLY OUTLOOK

State of Washington
April 1, 1968

* * * * *
* The snowpack in Washington and tributary basins continues to de- *
* teriorate from that which was reported on March 1. As a result *
* of this the water supply outlook has generally been reduced with *
* the exception of the main stem of the Columbia River. Snow sur- *
* veys made in the State and adjoining areas indicate the snowpack *
* to range from a low of only 2% of normal to a high of 1% greater *
* than normal. The most favored locations in the State remain the *
* northcentral area of Chelan, Methow and Okanogan watersheds. *
* These above-mentioned watersheds also have deteriorated from that *
* which was reported last month. The storms of the last of March *
* did much to improve the situation but could not overcome the gen- *
* eral downward trend which has existed over the whole State since *
* February 1. Runoff has been well above normal, with the excep- *
* tion of the southeastern area, and this early runoff has filled *
* most of the reservoirs used for irrigation and power until little *
* danger exists for water shortages this year for those water users *
* lucky enough to have stored water. Water users relying upon dir- *
* ect diversions will probably feel the shortage starting in late *
* summer. Subsequent precipitation will do much to alleviate this *
* expected shortage. Franklin D. Roosevelt Lake has been lowered *
* until only approximately 10% of its capacity is left. This low- *
* ering was intentionally done for work on the third power house at *
* Grand Coulee. It is expected that this reservoir will fill com- *
* fortably when the need arises for water in the area. Precipita- *
* tion during the month of March was above normal only in two of *
* the tributary areas and in the State. The Upper Columbia Basin *
* in Canada and the northwestern slopes of the Cascades experienced *
* this above-normal precipitation. All other areas had considerably *
* less than average rainfall. The soil moisture picture has not *
* improved due to the lack of rainfall in those areas where the soil *
* moisture stations are located. The early melt has helped the *
* soil moisture picture where the soil electrodes are buried in the *
* ground beneath the snowpack. Those areas bare of snow have less *
* than normal soil mantle moisture. *
* * * * *

SNOW COVER

Only the Methow drainage has a snow cover above normal and this only by 1%. The Okanogan, Chelan and Skokomish watersheds have a snow cover that is within 20% of normal while the remaining all have less than this 20% figure. The lack of snow is a result of below-normal precipitation and above-normal temperatures. Storms of the last week in March were measured in most cases and this addition to the snowpack will help the subsequent water supply but not enough to overcome the massive deficit. The two low points in the State are

the Cedar River with an average of only 2% of normal as of April 1 and Mill Creek which has a snow cover that is only 11% of normal. The Mill Creek watershed is measured by a snow course to the south in Oregon. The Cedar River watershed has most of its snow courses at the middle to lower elevation zones and these snow courses have generally melted out during the month.

RESERVOIRS

Generally speaking, the reservoirs in the State of Washington have sufficient stored water to overcome the lack of runoff expected this summer. Irrigation reservoirs in the Yakima basin are now full while those in the Okanogan drainage should fill with the spring runoff. The power reservoirs in the Skagit are full and will spill excess water early this spring. Coeur d'Alene Lake and Franklin D. Roosevelt Lake have less than normal amounts of water in storage but difficulties are not expected although F. D. R. Lake is the lowest it has been for many years.

PRECIPITATION

As reported by the U. S. Weather Bureau fall precipitation was below normal in the northeastern and southeastern portions of the State. All other drainage divisions reported above-normal precipitation. This situation deteriorated during the winter months until all of the eight drainage divisions have well below-normal precipitation through the month of March. In the Yakima watershed precipitation for March was 69.5% of normal and for the period since September 1, 95.4%.

SOIL MOISTURE

Not much can be said regarding the soil moisture condition in the State due to the lack of rainfall on those soil moisture stacks without snow cover and the increased melting on those beneath a snow mantle. This condition leaves the soil moisture picture in an unsettled condition. Reference should be made to the fall soil moisture report for indications of total soil moisture before the snow fell.

STREAMFLOW

During the month of March streamflows ranged from a low of 70% below normal for the Walla Walla River measured at Touchet to a high of 181% greater than normal for the Methow at Pateros. All streamflows were above normal with the exception of that flowing out of the Blue Mountains in southeastern Washington. Forecasts of streamflows can be found following this narrative statement and range from a high of 98% of normal to a low of 51%.

STREAMFLOW FORECASTS - APRIL 1968

The following summarized runoff forecasts are based principally on mountain snow cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts.

Basin, Stream and Station	Forecast Runoff 1968	Seasonal Streamflow in Thousands of Acre-Feet					
		% 15-Yr. Avg.	Fore- cast Period	Measured Runoff			15-Yr. Avg. 1948-62
				1967	1966	1965	
<u>COLUMBIA BASIN</u>							
<u>Columbia River System</u>							
<u>Columbia River</u>							
at Birchbank <u>1/</u>	44130	98	Apr-Sep	51490	45563	43275	40527
	34700	98	Apr-Jul	40874	35808	32967	35517
	24900	100	Apr-Jun	27224	24863	23221	24982
<u>Columbia River</u>							
at Grand Coulee <u>1/</u>	64860	92	Apr-Sep	73451	62404	69626	70253
	55000	93	Apr-Jul	61876	51602	56879	58921
	42500	93	Apr-Jun	45656	38739	44465	45486
<u>Columbia River</u>							
bl Rock Island Dam <u>1/</u>	70600	91	Apr-Sep	80788	67973	74986	77313
	58500	90	Apr-Jul	68577	56575	61759	64967
	45800	91	Apr-Jun	51114	42757	48045	50178
<u>Columbia River</u>							
at The Dalles, Ore <u>1/</u>	95000	87	Apr-Sep	108237	86923	112902	108696
	81400	88	Apr-Jul	92498	72261	95012	92527
	66100	89	Apr-Jun	70762	56465	76940	74281
<u>Pend Oreille River System</u>							
<u>Pend Oreille River</u>							
bl. Box Canyon	13600	80	Apr-Sep		13761	19515	16905
	12400	80	Apr-Jul		12783	17601	15571
	10700	80	Apr-Jun		11059	15299	13399
<u>Kettle River System</u>							
<u>Kettle River nr.</u>							
nr. Laurier	1760	86	Apr-Sep		1380	1852	2051
	1680	86	Apr-Jul		1326	1759	1952
	1530	86	Apr-Jun		1172	1657	1774

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

Streamflow Forecasts - April 1968 (Cont.)

Basin, Stream and Station	Forecast Runoff 1968	Seasonal Streamflow in Thousands of Acre-Feet				
		% 15-Yr. Avg.	Fore- cast Period	Measured Runoff		
				1967	1966	1965
						15-Yr. Avg. 1948-62
<u>Kettle River System (Cont.)</u>						
Colville River						
at Kettle Falls	130	71	Apr-Sep	80	166	187
	121	70	Apr-Jul	73	154	172
	113	71	Apr-Jun	67	146	159
<u>Spokane River System*</u>						
Spokane River						
at Post Falls, Ida <u>2/</u>	2250	66	Apr-Sep	2513	3345	3413
	2220	67	Apr-Jul	2456	3210	3316
	2100	67	Apr-Jun	2365	3067	3158
<u>Okanogan River System **</u>						
Similkameen River						
nr. Nighthawk	1470	88	Apr-Sep	975	1356	1665
	1360	87	Apr-Jul	912	1260	1550
	1170	87	Apr-Jun	773	1114	1331
Okanogan River						
at Oroville <u>3/</u>	406	82	Apr-Sep	191	447	495
	404	82	Apr-Jul	208	441	493
	387	82	Apr-Jun	193	439	472
Okanogan River						
nr. Tonasket	1720	88	Apr-Sep	1046	1614	1957
	1540	87	Apr-Jul	957	1474	1771
	1310	87	Apr-Jun	804	1300	1502
<u>Methow River System **</u>						
Methow River						
nr. Pateros	1100	93	Apr-Sep	661	817	1178
	1010	92	Apr-Jul	610	740	1096
	875	93	Apr-Jun	515	639	940
<u>Chelan River System</u>						
Chelan River						
at Chelan <u>4/</u>	1280	95	Apr-Sep	987	1149	1352
	1130	94	Apr-Jul	874	1012	1202
	890	94	Apr-Sep	686	792	946

* Forecasts made by Morland W. Nelson and J. Alden Wilson, Soil Conservation Service, Boise, Idaho.

** These forecasts are based in part upon base flow data especially prepared and furnished for this purpose by the U. S. Geological Survey.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage and diversions.

4/ Observed flow corrected for storage in Lake Chelan.

Streamflow Forecasts - April 1968 (Cont.)

Basin, Stream and Station	Forecast Runoff 1968	Seasonal Streamflow in Thousands of Acre-Feet				
		% 15-Yr. Avg.	Fore- cast Period	Measured Runoff		
				1967	1966	1965
						15-Yr. Avg. 1948-62
<u>Chelan River System (Cont.)</u>						
Stehekin River						
at Stehekin	850	90	Apr-Sep		746	826
	740	91	Apr-Jul		637	701
	560	91	Apr-Jun		493	536
						943
						810
						617
<u>Wenatchee River System</u>						
Wenatchee River						
at Plain	1100	79	Apr-Sep		1091	1308
	1010	80	Apr-Jul		999	1189
	810	80	Apr-Jun		816	975
						1397
						1267
						1013
Wenatchee River						
at Peshastin	1460	76	Apr-Sep		1493	1747
	1350	77	Apr-Jul		1379	1604
	1100	78	Apr-Jun		1131	1328
						1924
						1758
						1415
Stemilt Basin						
nr. Wenatchee	100*	--	May-Sep		132*	132*
						--
<u>Yakima River System</u>						
Yakima River						
nr. Martin <u>5/</u>	95	60	Apr-Sep		129	133
	88	60	Apr-Jul		125	126
	76	60	Apr-Jun		113	115
						158
						146
						126
Yakima River						
at Cle Elum <u>6/</u>	600	57	Apr-Sep		855	921
	560	58	Apr-Jul		789	851
	490	59	Apr-Jun		702	756
						1046
						962
						834
Yakima River						
nr. Parker <u>7/</u>	1130	56	Apr-Sep		1418	1653
	1110	56	Apr-Jul		1434	1643
	1040	57	Apr-Jun		1336	1571
						2016
						1988
						1826
Kachess River						
nr. Easton <u>8/</u>	78	55	Apr-Sep		109	117
	74	55	Apr-Jul		107	112
	65	55	Apr-Jun		99	104
						141
						134
						118

* Thousands of Miners' Inches.

5/ Observed flow corrected for storage in Lake Keechelus.6/ Observed flow corrected for storage in Keechelus, Kachess and Cle Elum Lakes and diversion by Kittitas Canal.7/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation and Sunnyside Canals.8/ Observed flow corrected for storage in Lake Kachess.

Streamflow Forecasts - April 1968 (Cont.)

Basin, Stream and Station	Forecast Runoff 1968	Seasonal Streamflow in Thousands of Acre-Feet				
		% 15-Yr. Avg.	Fore- cast Period	Measured Runoff		
				1967	1966	1965 15-Yr. Avg. 1948-62

Yakima River System (Cont.)

Cle Elum River nr. Roslyn <u>9/</u>	330	62	Apr-Sep	413	448	525
	310	64	Apr-Jul	391	418	483
	260	64	Apr-Jun	338	367	407
Bumping River nr. Nile <u>10/</u>	100	61	Apr-Sep	126	140	163
	94	62	Apr-Jul	117	131	151
	78	63	Apr-Jun	102	115	124
American River nr. Nile	90	64	Apr-Sep	113	121	140
	84	65	Apr-Jul	106	113	130
	71	66	Apr-Jun	90	100	108
Tieton River at Tieton Dam <u>11/</u>	180	64	Apr-Sep	197	236	280
	157	65	Apr-Jul	177	205	241
	127	66	Apr-Jun	148	175	193
Naches River nr. Naches <u>12/</u>	600	60	Apr-Sep	769	888	991
	550	61	Apr-Jul	707	814	908
	490	63	Apr-Jun	621	719	776
Ahtanum Creeks nr. Tampico <u>13/</u>	46	84	Apr-Sep	39	44	55
	43	84	Apr-Jul	36	40	51
	38	85	Apr-Jun	32	36	45

Lower Columbia River System

Mill Creek nr. Walla Walla	17	51	Apr-Sep	23	27	34
	15	50	Apr-Jul	20	23	30
	14	52	Apr-Jun	18	21	27
Lewis River at Ariel <u>14/</u>	1110	77	Apr-Sep	1371	1057	1450
	1000	78	Apr-Jul	1234	940	1386
	900	79	Apr-Jun	1081	854	1140

9/ Observed flow corrected for storage in Lake Cle Elum.

10/ Observed flow corrected for storage in Bumping Lake.

11/ Observed flow corrected for storage in Rimrock Lake.

12/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals and City of Yakima.

13/ Observed flow of North and South Forks (combined).

14/ Observed flow corrected for storage in Lake Merwin, Yale and Swift Reservoirs.

Streamflow Forecasts - April 1968 (Cont.)

Basin, Stream and Station	Forecast Runoff 1968	Seasonal Streamflow in Thousands of Acre-Feet					
		%	Fore-	15-Yr.			
		15-Yr.	cast	Avg.			
		Avg.	Period	1967	1966	1965	1948-62

Lower Columbia River System (Cont.)

Cowlitz River							
at Castle Rock <u>15/</u>	2210	75	Apr-Sep		2691	2174	2954
	2020	77	Apr-Jul		2420	1901	2620
	1750	78	Apr-Jun		2056	1650	2244

OLYMPIC PENINSULA

Dungeness River System

Dungeness River							
nr. Sequim	135	76	Apr-Sep		173	130	178
	115	78	Apr-Jul		149	108	147
	87	78	Apr-Jun		142	84	111

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about April 1, 1968 as per cent of the same date in 1967 and 1966 and average of record.

Tributary Basin	No. of Courses Average	Years of Record	1968 Snow Water Expressed as per cent of		
			1967	1966	1948-62 Avg.

UPPER COLUMBIA BASIN

Pend Oreille	11 - 14	4 - 31	76	85	78
Kettle	10 - 13	5 - 30	73	92	77
Colville	5	9	116	68	73
Spokane	6 - 11	4 - 31	69	79	52
Sanpoil	1	29	81	87	89
Okanogan	24 - 32	3 - 33	79	105	94
Methow	9 - 10	7 - 26	90	119	101
Chelan	3 - 5	7 - 36	85	114	91
Entiat	6 - 8	1 - 3	76	97	--
Wenatchee	13 - 14	7 - 36	65	61	56
Yakima	20 - 30	2 - 48	56	50	50
Ahtanum	2	19	67	60	74

LOWER COLUMBIA

Mill Creek	1	37	14	12	11
White Salmon	2	24	54	49	52
Lewis	16 - 18	7 - 24	50	34	51
Cowlitz	8 - 10	5 - 28	54	50	53

PUGET SOUND

Nisqually	3 - 4	3 - 18	42	51	41
White	3	12 - 28	65	71	70
Green	6 - 9	7 - 22	30	29	28
Cedar	6 - 7	9 - 20	4	2	2
Snoqualmie	2 - 3	10 - 22	36	32	36
Skykomish	3	10 - 22	39	41	41
Skagit	14	17 - 36	72	87	77
Nooksack	1 - 3	2 - 11	48	96	66

OLYMPIC PENINSULA

Skokomish	4 - 5	4 - 18	72	70	84
Elwha	1	18	55	55	58
Dungeness	1	18	60	--	63

RESERVOIR STORAGE - 1000 Acre Feet

BASIN or STREAM	RESERVOIR	USABLE ^{1/} CAPACITY	1968	Measured (April)		
				1967	1966	Normal*
<u>COLUMBIA</u>						
Spokane	Coeur d'Alene Lake	225.1	156.5	158.1	187.0	174.4
Columbia	Franklin D. Roosevelt Lake	5232.0	585.2	1957.1	872.0	2969.4
Columbia	Banks Lake ^{2/}	761.8	682.9	661.5	481.6	505.1
Okanogan	Concondilly Reservoir	13.0	7.2	3.9	0.7	8.0
Okanogan	Salmon Lake	10.5	8.9	3.3	7.6	8.9
Chelan	Lake Chelan	676.1	437.3	90.7	85.3	197.9
<u>YAKIMA</u>						
Yakima	Keechelus Lake	157.8	146.4	127.2	92.9	94.4
Kachess	Kachess Lake	239.0	225.1	204.2	177.1	182.4
Cle Elum	Lake Cle Elum	436.9	390.2	290.8	213.2	271.9
Bumping	Bumping Lake	33.7	16.6	3.8	4.2	13.4
Tieton	Rimrock Lake	198.0	186.1	128.7	92.0	129.0
<u>PUGET SOUND</u>						
Skagit	Ross Reservoir ^{2/}	1202.9	1154.5	866.3	503.3	513.8
Skagit	Diablo Reservoir	90.6	85.4	84.0	84.2	82.1
Skagit	Gorge Reservoir	9.8	7.9	8.2	7.2	--

^{1/} Based on Active Storage

^{2/} Less than 15-year record in period 1948-62

* 15-year average 1948-62

SOIL MOISTURE - APRIL

Drainage Basin and Station	Number	Elev.	Profile Depth	(Inches) : Total : Capacity :	Soil Moisture Content (Inches) as of April 1 1968 1967 1966		
<u>CRAB CREEK</u>							
Creston-Kunz	18B1m	2440	48	13.6	7.1	10.2	11.3
Jack Woods	18B3m	2600	48	13.6	9.4	9.7	9.9
Krause	18B4m	2440	48	13.6	8.7	9.2	9.8
Sheffels	18B5m	2360	48	13.6	6.6	8.1	7.2
Sherman	18B7m	2440	48	13.6	7.8	10.2	--
Wheatridge	18B6m	2200	48	13.6	9.2	9.2	8.0
<u>OKANOGAN</u>							
Salmon Meadows	19A2M	4500	48	5.4	3.6	3.7	2.1*
Trout Creek	3-M	3600	48	7.3	4.1*	4.0	5.5
<u>YAKIMA</u>							
Domery Flat	21B20m	2200	48	6.9	5.0*	5.7	5.2
Lake Cie Elum	21B14M	2200	48	12.8	9.2*	9.2	9.0
<u>WALLA WALLA</u>							
Couse	17C3m	3650	48	11.1	6.8	10.2	7.9
Helmrs	17C2M	4400	48	12.0	11.7	11.0	7.4
<u>WENATCHEE</u>							
Upper Wheeler	20B7M	4400	48	12.7	13.0*	12.2	9.0

* March 1 measurement

FALL SOIL MOISTURE

Drainage Basin and Station	Number	Elev.	Profile Depth	(Inches) : Total : Capacity :	Soil Moisture Content (Inches) as of Oct. 1 1967 1966 1965		
<u>CRAB CREEK</u>							
Creston-Kunz	18B1m	2440	48	13.6	4.6	5.0	4.9
Jack Woods	18B3m	2600	48	13.6	5.2	4.3	5.0
Krause	18B4m	2440	48	13.6	4.9	5.1	5.8
Sheffels	18B5m	2360	48	13.6	3.7	3.8	4.0
Sherman	18B7m	2440	48	13.6	3.6	3.7	--
Wheatridge	18B6m	2200	48	13.6	4.0	4.1	4.3
<u>OKANOGAN</u>							
Salmon Meadows	19A2M	4500	48	5.4	1.5	3.0	1.9
Trout Creek	3-M	3600	48	7.3	4.0	3.8	4.1
<u>YAKIMA</u>							
Domery Flat	21B20m	2200	48	6.9	4.8	2.4	1.9
Lake Cle Elum	21B14M	2200	48	12.8	9.1	6.4	6.9
<u>WALLA WALLA</u>							
Couse	17C3m	3650	48	11.1	5.4	5.7	6.0
Helmrs	17C2M	4400	48	12.0	6.7	6.7	6.2
<u>WENATCHEE</u>							
Upper Wheeler	20B7M	4400	48	12.7	5.6	5.7	6.2

PRECIPITATION 1/

Division Averages and Departures

DRAINAGE DIVISIONS	FALL		WINTER	
	Sept - Oct. 1967 <u>2/</u>	Observed - Departure	Nov. 1967 - Mar. 1968 <u>2/</u>	Observed - Departure
Columbia in Canada	5.28	+1.25	10.81	-1.78
Pend Oreille - Spokane	5.48	+0.48	15.98	-2.95
Northeastern Washington	2.84	-0.23	9.37	-1.80
Southeastern Washington	2.85	-0.39	10.10	-2.69
Central Washington	8.44	+2.98	25.65	-3.11
North Central Washington	2.33	+0.69	6.11	-0.98
Northwest Slope Cascades	18.96	+6.10	50.96	-1.42
Southwest Slope Cascades	11.43	+2.34	36.56	-5.05

Northeastern Washington	- Lower Spokane, Colville, Sanpoil and lower Kettle drainages.
Southeastern Washington	- Touchet, Tucannon and Palouse drainages.
Central Washington	- Yakima, Wenatchee and Chelan drainages.
North Central Washington	- Methow and Okanogan drainages.
Northwest Slope Cascades	- Puget Sound drainages.
Southwest Slope Cascades	- Lower Columbia drainages.

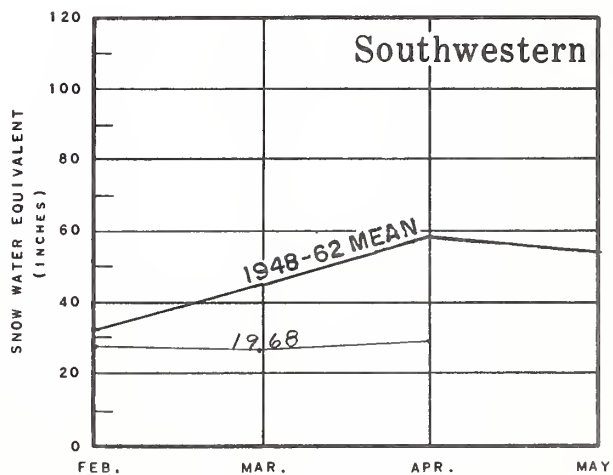
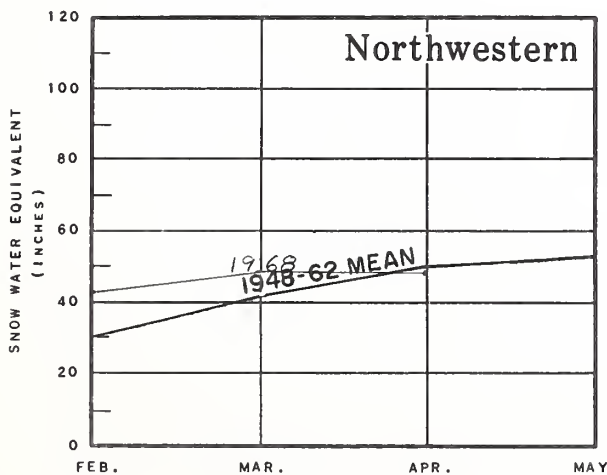
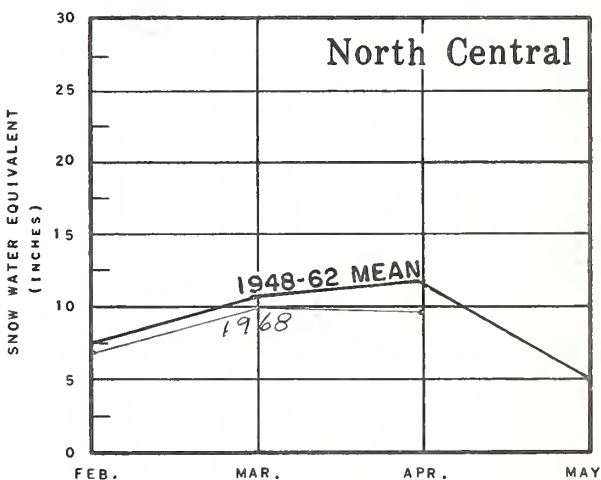
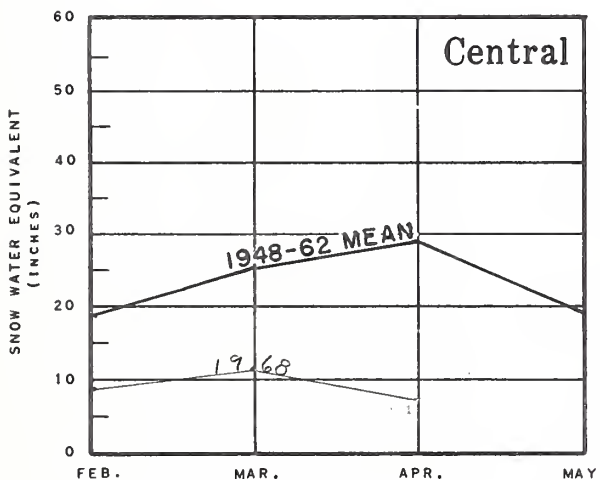
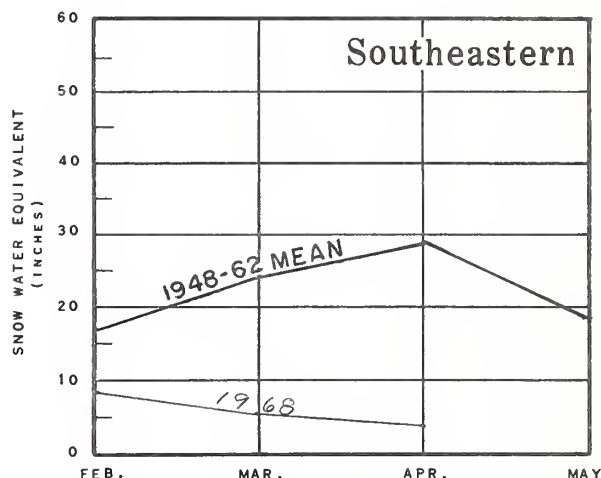
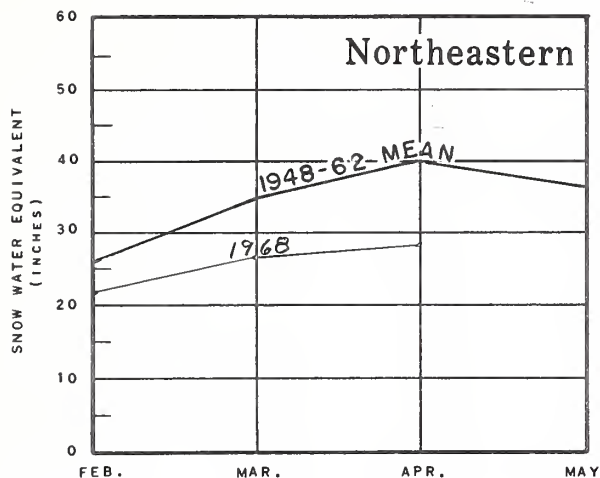
1/ - Preliminary analysis by U. S. Weather Bureau from data furnished by Meteorological Services of Canada and U. S. Weather Bureau.

2/ - Departure from 15-year (1948-62) drainage division average.

WASHINGTON SNOW COVER

1968

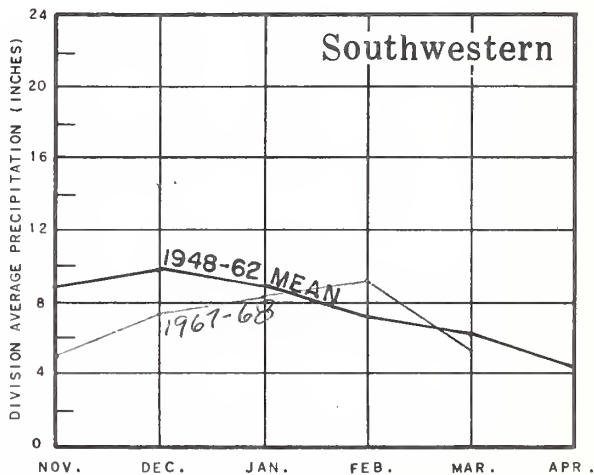
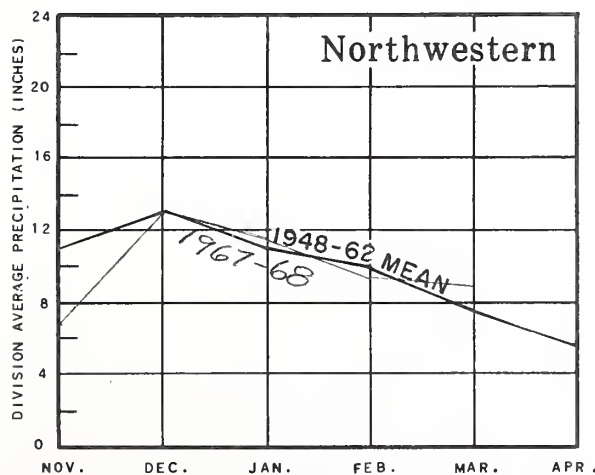
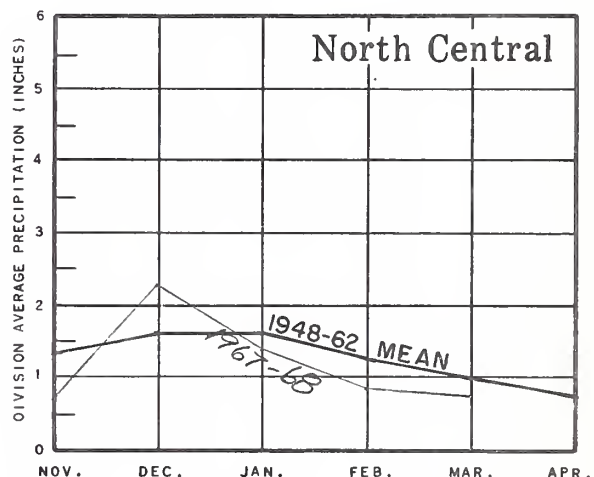
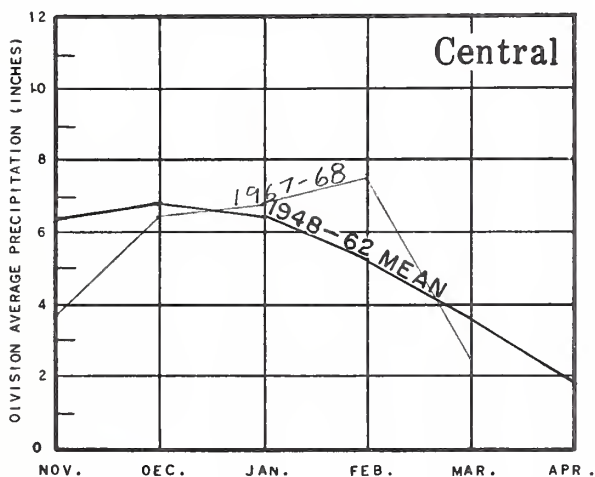
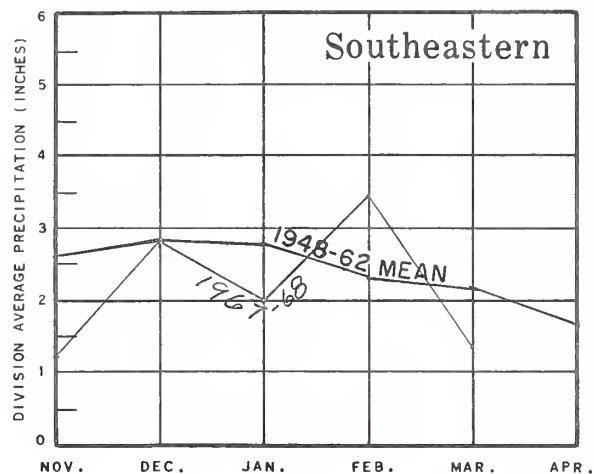
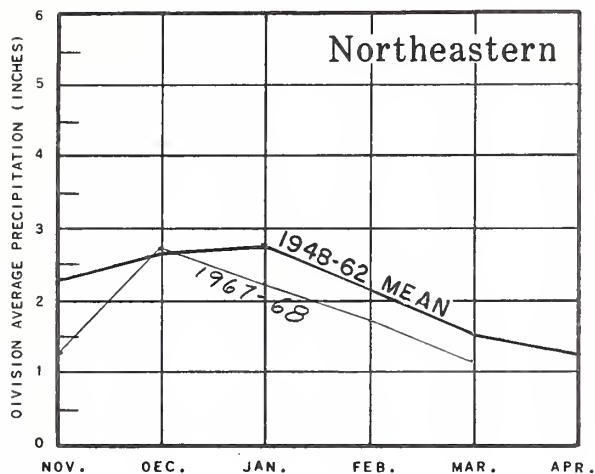
DRAINAGE AREAS



WASHINGTON VALLEY PRECIPITATION

1967-1968

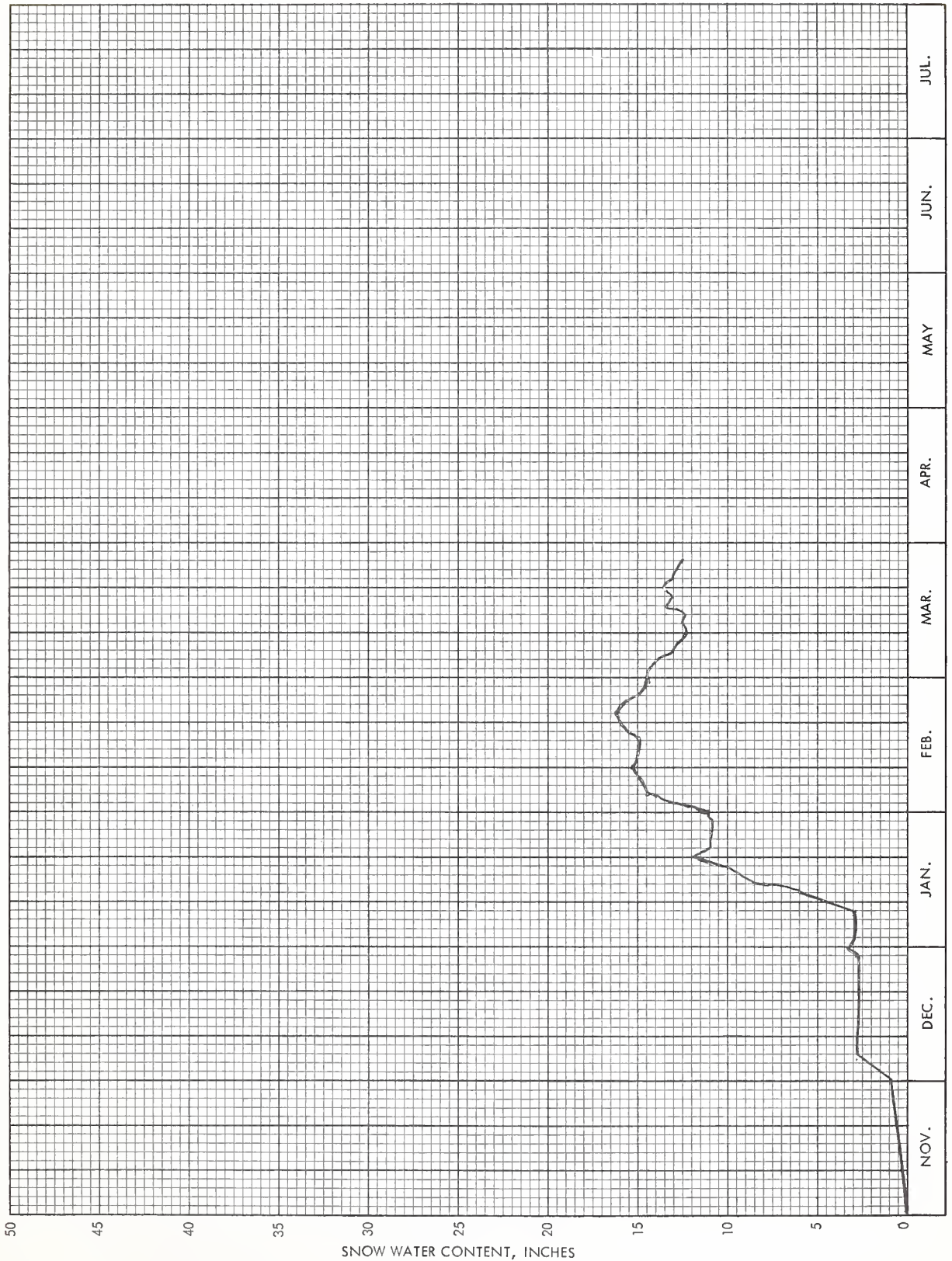
DRAINAGE AREAS



SNOW PILLOW DATA

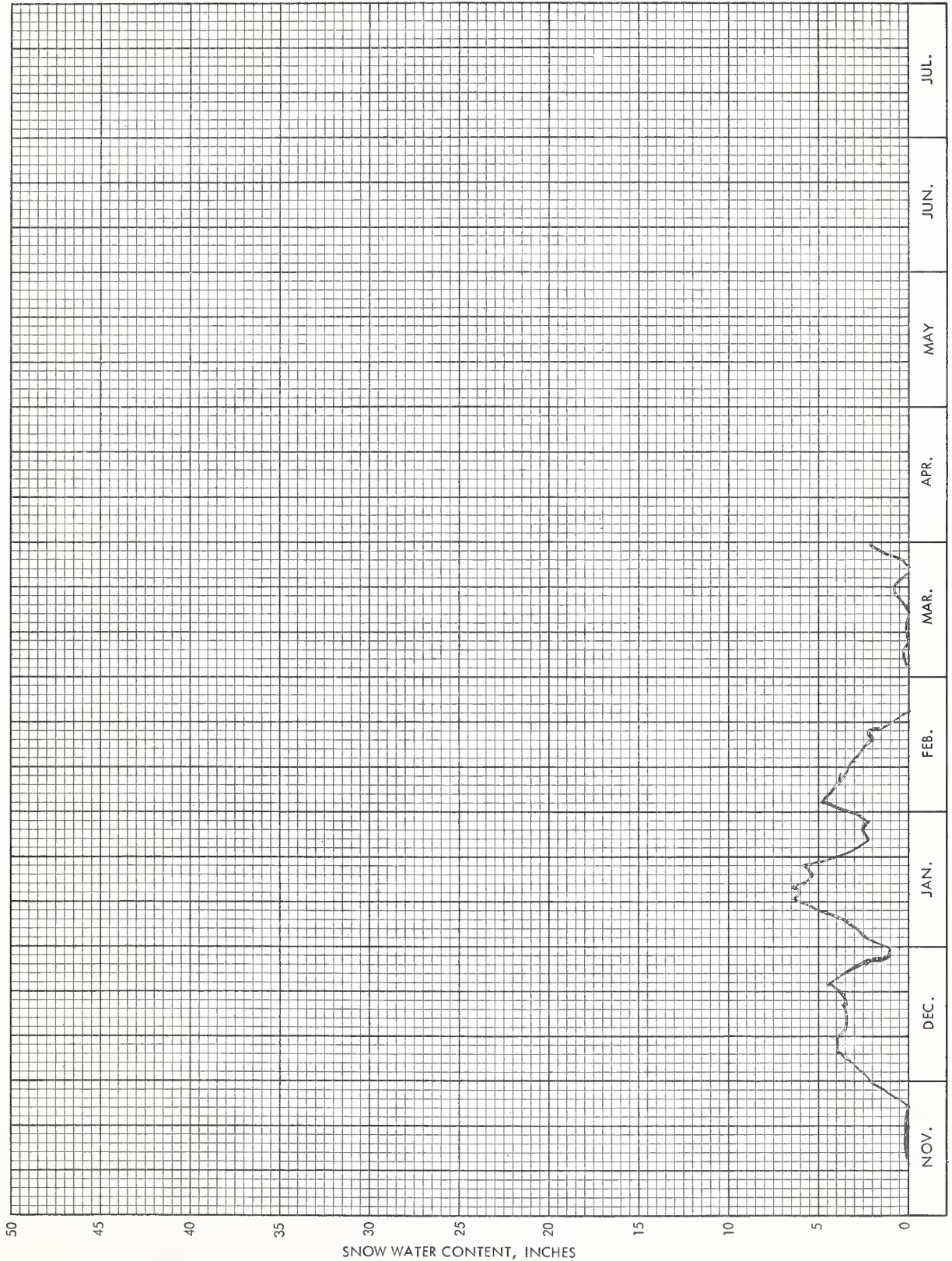
Berne-Mill Creek

Sec. 13 T. 26N R. 14E No. 21B41SP Drainage: Wenatchee
 Lat. 47°46' Long. 121°01' Elev. 3170'



SNOW PILLOW DATA
Cougar Mountain - FS

Sec. 28 T. 21 N R. 9E No. 21B42SP Drainage: Green River
Lot. _____ Long. _____ Elev. 3200'

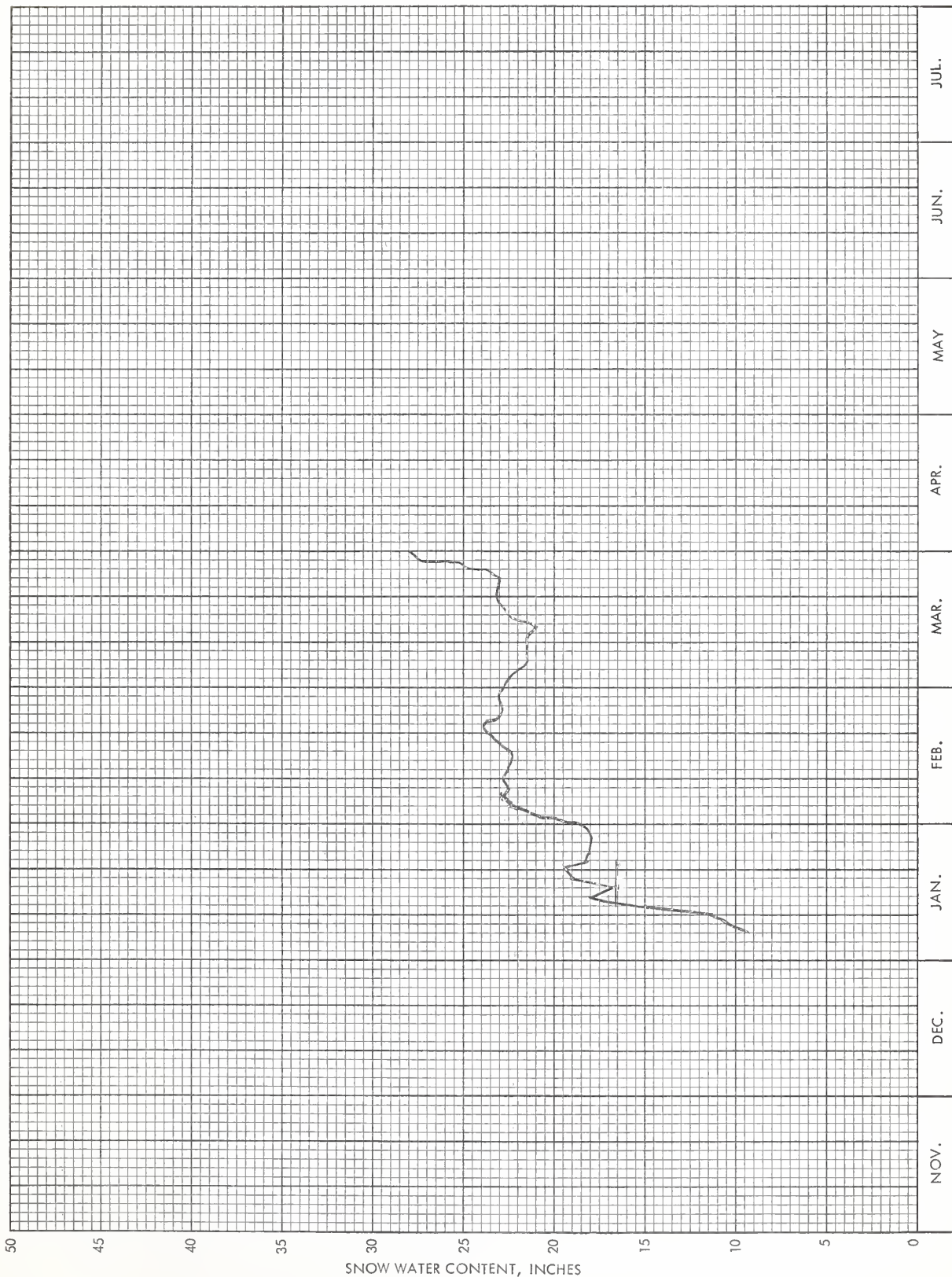


SNOW PILLOW DATA

Snowshoe Butte

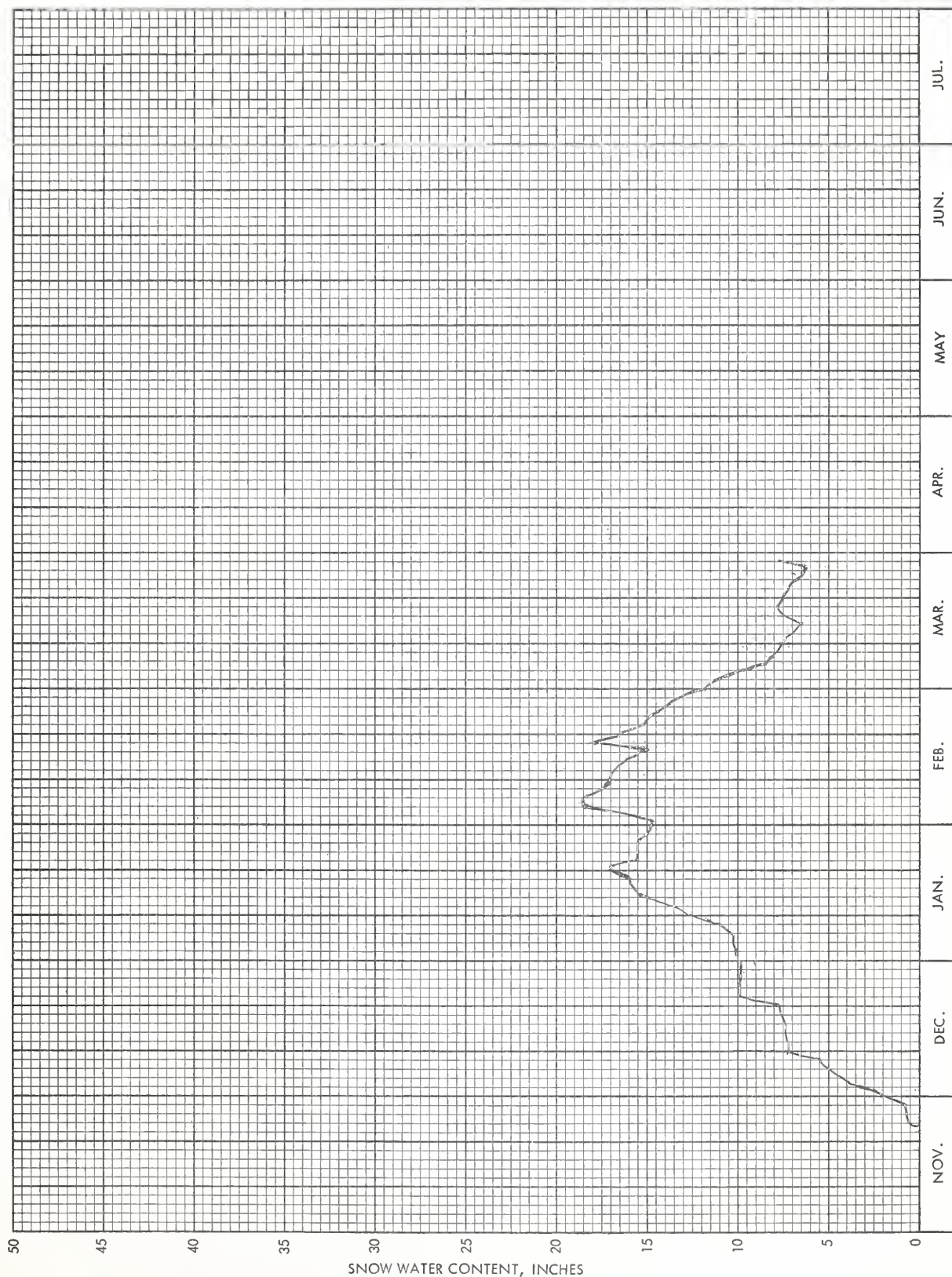
Sec. 14 T. 20N R. 11E No. 21343SP Drainage: Green River

Lat. _____ Long. _____ Elev. 5000'



SNOW PILLOW DATA
EBA Pillow - Snoqualmie Pass

Sec. 4 T. 22N R. 11E No. 21B33SP Drainage: Yakima
Lat. 47° 25' Long. 121° 25' Elev. 3020'



APPENDIX 1
SNOW DATA MARCH 1 to APRIL 1, 1968

SNOW

DRAINAGE BASIN and SNOW COURSE			1968			PAST RECORD		
			Date of Survey	Snow Depth (In.)	Water Content (In.)	Water Content (In.)		
Name	No.	Elev.				1967	1966	1948-62 Avg.

U P P E R C O L U M B I A D R A I N A G E

PEND OREILLE RIVER

Baree Creek	15B11	5500	4/1	98	40.7	56.6	45.0	50.5
Baree Midway	15B16	4600	4/1	66	27.7	39.0	--	--
Benton Meadow	16A2	2344	3/28	1	0.3	1.6	2.8	3.3
Benton Spring	16A3	4900	3/29	35	13.3	23.0	19.0	22.9
Boyer Mountain	17A2	5250	3/27	63	23.2	23.9	26.0	29.8
Brush Creek	14A4	5000	3/29	23	8.5	14.4	11.4	14.3*
Bunchgrass Meadow	17A1	5000	3/29	68	26.3	41.1	28.9	32.0
#Chewelah	17A4	4925	3/29	45	15.9	16.2	21.6	20.0*
Hoodo Creek	15C1	6200	4/2	110	41.3	53.4	42.6	53.4
Lookout	15B2	5250	4/1	78	28.8	40.8	34.3	40.5
Mosquito Ridge	16A4A	5100	4/4	73	31.8	--	39.0	41.2
Nelson	Canada	3050	3/28	37	14.0	18.2	19.9	17.8
Schweitzer Bowl	16A6	4500	3/29	68	27.7	39.3	34.2	--
Schweitzer Ridge	16A5	6100	3/29	106	41.0	47.7	48.8	--
Smith Creek	16A1	4800	3/28	109	43.8	49.3	47.4	50.9
Winchester Creek	17A3	2970	3/27	27	10.7	8.7	13.2	11.9*

KETTLE RIVER

Barnes Creek	Canada	5300	3/27	69	23.2	25.4	23.5	21.8**
Big White Mountain	Canada	5500	3/31	60	17.7	24.7	15.8	--
Boulder Road	18A2	1450	3/27	0	0.0	0.0	2.5	1.9*
Butte Creek	18A3	4070	3/27	26	8.1	10.6	8.4	10.4*
Cabin Creek	18A8	3170	3/27	21	7.5	8.0	7.8	8.9*
Carmi	Canada	4100	3/30	12	4.1	8.5	2.3	--
Farron	Canada	4000	3/29	33	12.1	15.6	11.7	15.6
Goat Creek	18A4	3595	3/27	0	0.0	6.1	5.6	6.5*
Lower Trapping Cr.	Canada	3050	Late Report			4.6	2.3	--
#Monashee Pass	Canada	4500	3/27	46	14.6	17.0	14.2	13.9**
Snow Caps Creek	18A5	2150	3/27	0	0.0	0.0	0.0	1.9*
Snow Caps Trail	18A6	2720	3/27	5	1.8	4.1	5.7	5.7*
Summit G. S.	18A7	4600	3/27	22	7.2	9.3	7.1	9.6*
Upper Trapping Cr.	Canada	5500	3/31	24	6.6	11.0	7.7	--

COLVILLE RIVER

Baird	17A6	3215	3/26	1	0.4	3.4	6.5	6.4*
Carlson	18A9	2885	3/28	0	0.0	0.0	1.4	2.7*

Not located directly on this drainage

* Adjusted 1948-62 average

** Average for years of record

APPENDIX 2

SNOW

DRAINAGE BASIN and SNOW COURSE			1968			PAST RECORD		
			Date of Survey	Snow Depth (in.)	Water Content (in.)	Water Content (in.)		
Name	No.	Elev.				1967	1966	1948-62 Avg.

COLVILLE RIVER (Cont.)

Chewelash	17A4	4925	3/29	45	15.9	16.2	21.6	20.0*
Stranger Mountain	17A5	4990	3/27	35	13.2	10.7	16.9	15.3*
Togo	18A10	3370	3/28	29	11.8	5.4	14.1	12.0*

SPOKANE RIVER

Above Burke	15B8	4100	4/3	35	14.6	28.5	26.7	22.5
Above Roland	15B7	4350	4/3	42	18.8	41.1	29.7	32.3
Below Roland	15B6	3770	Not Measured			18.9	15.2	15.5
Copper Ridge	16B2	4800	3/29	38	16.0	33.6	29.4	33.3
Forty-nine Meadows	15B3	5000	4/1	54	25.4	34.2	34.7	39.4
Fourth of July Summit	16B3	3100	3/14	0	0.0	7.8	--	--
			4/1	0	0.0	8.2	8.1	11.2
Granite Peak	15B13A	6000	4/1	106	45.2	52.4	47.0	--
Kellogg Peak	16B5A	5560	4/3	54	22.7	36.1	32.4	35.8*
#Lookout	15B2	5250	4/1	78	28.8	40.8	34.3	40.5
Lost Lake	15B14A	6000	4/1	117	51.8	67.4	53.6	--
Lower Sands Creek	16B1	3400	3/29	27	10.8	17.4	20.2	22.7*
Medicine Ridge	15B4A	6150	4/1	112	46.6	57.2	46.8	--
#Mosquito Ridge	16A4A	5110	4/4	73	31.8	--	39.0	41.2
Outlaw Creek	15B12A	3750	4/1	22	10.8	15.0	18.0	--
Roland Summit	15B5A	5200	4/3	54	24.3	47.1	27.7	44.7*
Sherwin	16C1	3200	3/29	8	3.7	13.0	11.3	15.8*
Sunset	15B9A	5600	4/3	66	27.4	43.5	35.3	36.3*

SANPOIL RIVER

Sherman Creek Pass	18A1	5350	3/26	43	14.3	17.6	16.5	16.0
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OKANOGAN RIVER

Aberdeen Lake	Canada	4300	4/1	19	4.8	5.4	5.0	7.1
Blackwall Mountain	Canada	6250	4/1	97	39.1	44.0	31.6	33.5**
Bouleau Creek	Canada	5000	3/31	39	11.6	12.1	9.5	11.8**
Brookmere	Canada	3200	3/31	26	9.1	11.6	8.6	10.1
Carrs Landing #1	Canada	2250	3/23	0	0.0	0.0	--	--
Carrs Landing #2	Canada	3200	3/23	0	0.0	3.7	--	--
Clark +	19A8a	7000	Not Measured			23.1	18.9	25.7*
Copper Mountain	Canada	4300	3/30	0	0.0	5.3	5.5	5.9**
Enderby	Canada	6250	3/28	112	43.3	46.7	32.3	--

Not located directly on this drainage

** Average for years of record

* Adjusted 1948-62 average

+ Snow water equivalent estimated from aerial stadia observations

APPENDIX 3

SNOW

DRAINAGE BASIN and SNOW COURSE			1968			PAST RECORD		
			Date of Survey	Snow Depth (in.)	Water Content (in.)	Water Content (in.)		
Name	No.	Elev.				1967	1966	1948-62 Avg.
<u>OKANOGAN RIVER (Cont.)</u>								
#Freezeout Meadows	20A2	5000	3/31	74	27.0	34.7	43.0	35.6
Hamilton Hill	Canada	4900	3/31	40	13.3	18.7	14.8	14.8**
#Harts Pass	20A5A	6500	3/30	136	48.8	53.3	40.5	49.6*
#Horseshoe Basin +	19A5a	7000	3/30	52	20.8	21.0	16.6	--
Isintok Lake	Canada	5510	3/30	21	6.6	10.3	5.5	--
Lost Horse Mountain	Canada	6300	Late Report		--	--	5.8	7.5**
#Loup Loup	19A7	4650	3/28	21	8.2	9.4	8.5	--
Lower Esperon Creek	Canada	4270	Not Measured		--	13.6	11.0	--
McCulloch	Canada	4200	3/29	15	5.0	8.2	5.0	6.9
Middle Esperon Creek	Canada	4580	Not Measured		--	14.7	13.6	--
Missezula Mountain	Canada	5100	4/1	28	9.0	11.4	6.0	7.7**
Mission Creek	Canada	6000	3/29	62	20.3	24.2	17.5	20.8
Monashee Pass	Canada	4500	3/27	46	14.6	17.0	14.2	13.9**
Mount Kobau	Canada	5950	3/31	37	12.0	15.2	11.0	--
Muckamuck	19A9a	6390	Not Measured		--	20.6	16.8	19.5*
Mutton Creek No. 1	19A1	5700	3/27	33	12.5	22.3	13.8	15.3
Mutton Creek No. 2	19A4	6000	3/27	42	13.7	21.1	14.6	16.4
New Copper Mountain	Canada	4300	3/30	0	0.0	5.8	5.3	4.7**
New Penticton Res.	Canada	5225	3/29	31	7.4	11.2	--	--
Nickel Plate Mtn.	Canada	6200	3/31	20	6.8	11.0	5.0	7.6**
Paysayten +	20A28a	4300	3/30	39	15.6	21.0	15.5	15.9*
Postill Lake	Canada	4500	3/29	27	8.4	9.2	7.2	8.8**
#Quartette Lake	Canada	4000	3/29	37	11.4	14.1	14.1	16.1
Rusty Creek	19A3	4000	3/27	12	4.8	7.6	6.6	8.0
Salmon Meadows	19A2	4500	3/27	27	9.8	13.2	8.0	11.8
Silver Star Mtn.	Canada	6050	3/28	86	32.8	36.9	26.0	24.7**
Starvation Mtn. +	19A10a	6750	Not Measured		--	24.2	21.0	25.2*
Summerland Res.	Canada	4200	3/30	26	8.7	12.0	9.8	9.0
Trout Creek	Canada	4700	3/29	17	5.3	8.7	5.4	7.8
Upper Esperon Creek	Canada	5290	Not Measured		--	--	19.2	--
White Rocks Mtn.	Canada	6000	3/27	67	24.4	30.0	22.0	19.9**

METHOW RIVER

Billy Goat Pass +	20A10a	6409	3/30	99	39.6	41.3	35.5	36.6*
Dollar Watch +	20A29a	7000	3/30	87	34.8	32.2	25.5	29.4*
Harts Pass	20A5A	6500	3/30	136	48.8	53.3	40.5	49.6*
Horseshoe Basin +	19A5a	7000	3/30	52	20.8	21.0	16.6	14.7*
Loup Loup	19A7	4650	3/28	21	8.2	9.4	8.5	9.7*
#Mutton Creek No. 1	19A1	5700	3/27	33	12.5	22.3	13.8	15.3
#Mutton Creek No. 2	19A4	6000	3/27	42	13.7	21.1	14.6	16.4

Not located directly on this drainage

+ Snow water equivalent estimated from aerial stadia observations

* Adjusted 1948-62 average

** Average for years of record

APPENDIX 4

SNOW

DRAINAGE BASIN and SNOW COURSE			1968			PAST RECORD		
			Date of Survey	Snow Depth (in.)	Water Content (in.)	Water Content (in.)		
Name	No.	Elev.				1967	1966	1948-62 Avg.

METHOW RIVER (Cont.)

#Rusty Creek	19A3	4000	3/27	12	4.8	7.6	6.6	8.0
#Salmon Meadows	19A2	4500	3/27	27	9.8	13.2	8.0	11.8
#War Creek Pass +	20A31a	6500	3/30	129	51.6	49.4	35.9	--

CHELAN LAKE BASIN

Little Meadows +	20A24a	5275	3/19	100	37.0	--	--	--
Lyman Lake	20A23A	5900	3/19	150	57.4	72.2	55.4	61.7
Park Creek Flat +	20A13a	2220	3/19	75	27.8	--	--	35.8
Park Creek Ridge	20A12A	4600	3/19	109	40.8	54.0	39.5	48.8
Rainy Pass	20A9	4780	3/30	120	41.0	50.1	34.9	42.5
Safety Harbor	20A30A	6300	3/26	87	29.2	33.5	27.5	--
War Creek Pass +	20A31a	6500	3/30	129	51.6	49.4	35.9	--

ENTIAT RIVER

Brief	20B19	1600	3/24	0	0.0	0.0	5.1	2.8*
Entiat Meadows +	20A33a	4800	3/13	120	41.4	--	--	--
			3/31	118	41.3	51.0	--	--
Entiat River Trail +	20A34a	3150	3/13	42	14.5	--	23.8	--
			3/31	26	11.0	24.0	13.4	--
Fox Camp +	20A36a	6510	3/13	160	55.2	--	--	--
			3/31	170	59.5	62.0	--	--
Pope Ridge	20B20	4300	3/12	33	11.3	15.7	17.7	--
			3/27	25	10.5	17.7	17.2	--
Pope Ridge S. P.	20B24SP	4300	3/27	--	7.6	--	--	--
Pugh Ridge +	20A32a	6400	3/13	99	33.9	--	28.0	--
			3/31	94	32.9	44.0	28.3	--
Snow Brushy +	20A35a	3850	3/13	107	36.9	--	35.4	--
			3/31	101	35.4	48.0	31.2	--
Shady Pass	20A37	5000	3/29	86	29.9	New Course		
Tommy Creek +	20B21a	5300	3/13	64	22.0	--	28.0	--
			3/31	62	21.7	33.0	19.7	--

WENATCHEE RIVER

Berne-Mill Creek	21B23	2925	3/11	39	15.1	--	--	--
			3/26	40	15.5	28.3	25.3	31.3*
Berne-Mill Cr. New	21B41SP	3240	3/15	--	12.8	--	--	--
			3/26	28	12.4	--	--	--
Blewett Pass No. 2	20B2	4270	3/11	16	7.1	10.3	--	--
			3/20	16	7.0	12.5	--	--

+ Snow water equivalent estimated from aerial stadia observations

* Adjusted 1948-62 average

APPENDIX 5

SNOW

DRAINAGE BASIN and SNOW COURSE			1968			PAST RECORD		
			Date of Survey	Snow Depth (in.)	Water Content (in.)	Water Content (in.)		
Name	No.	Elev.				1967	1966	1948-62 Avg.

WENATCHEE RIVER (Cont.)

Blewett Pass No. 2	20B2	4270	3/29	14	6.3	12.8	18.1	18.3
Chiwaukum G. S.	20B16	1810	3/11	23	8.8	--	--	--
#Fish Lake	21B4	3371	3/8	50	19.9	31.6	--	--
			3/20	50	18.6	33.5	--	--
			3/28	54	22.0	33.0	32.6	38.7
Lake Wenatchee	20B5	1970	3/11	23	8.4	10.7	--	--
			3/20	20	6.7	9.6	--	--
			3/26	15	5.6	8.6	11.8	12.8*
Leavenworth R. S.	20B17	1127	3/15	0	0.0	0.0	6.8	--
			3/28	0	0.0	0.0	0.0	--
#Lyman Lake	20A23A	5900	3/19	150	57.4	72.0	55.4	61.7
Merritt	20B18	2140	3/11	25	9.6	--	--	--
			3/26	19	6.8	8.6	16.3	16.1*
Stevens Pass South	21B1	4070	3/11	58	22.1	50.8	48.0	50.4*
			3/26	60	23.0	58.8	46.3	55.4
Stevens Pass Sand Shed	21B45	3700	3/11	32	14.1	New Course		
			3/26	35	14.0			

SQUILCHUCK CREEK

Beehive Springs	20B3	4400	3/27	7	2.8	3.0	10.3	9.0*
Scout-A-Vista	20B4	3400	3/27	10	4.2	1.5	8.5	7.6*

STEMILT CREEK

Jump-Off	20B8	4450	3/27	8	3.0	3.2	10.8	8.3*
Stemilt Slide	20B6	5000	3/28	29	11.8	11.3	15.2	15.1*
Upper Wheeler	20B7	4400	3/28	8	2.7	2.1	10.6	9.5*

CLOCKUM CREEK

Clockum Creek	20B22	5300	3/28	27	12.2	New Course		
Clockum Creek No. 2	20B23	4300	3/28	16	6.0	New Course		

YAKIMA RIVER

#Ahtanum R. S.	21C11	3100	3/28	0	0.0	0.0	9.5	5.6*
Big Boulder Creek	21B9	3200	3/8	11	4.6	9.7	--	--
			3/20	8	2.7	13.1	--	--
			3/28	6	1.9	12.1	20.4	22.3

Not located directly on this drainage

* Adjusted 1948-62 average

APPENDIX 6

SNOW			1968			PAST RECORD		
DRAINAGE BASIN and SNOW COURSE			Date of Survey	Snow Depth (in.)	Water Content (in.)	Water Content (in.)		
Name	No.	Elev.				1967	1966	1948-62 Avg.
#Blewett Pass No. 2	20B2	4270	3/11	16	7.1	10.3	--	--
			3/20	16	7.0	12.5	--	--
			3/29	14	6.3	12.8	18.1	18.3
Bumping Lake	21C8	3450	3/14	20	8.5	13.4	19.6	20.5*
			4/1	16	6.8	13.2	19.8	19.3
#Cayuse Pass	21C6	5300	3/30	169	64.9	100.8	88.6	96.2
Clockum Pass	20B9	5370	3/27	42	16.9	16.2	16.5	21.1*
Cooke Creek	20B10	4123	3/27	0	0.0	0.0	7.6	6.3*
Cooper Pass	21B36	3300	3/11	29	10.9	27.6	--	--
			3/19	33	12.0	32.4	--	--
			3/29	35	15.1	32.0	--	--
#Corral Pass	21C13	6000	3/30	81	26.9	47.6	40.8	45.7
Fish Lake	21B4	3371	3/8	50	19.9	31.6	--	--
			3/20	50	18.6	33.5	--	--
			3/28	54	22.0	33.0	32.6	38.7
Green Lake	21C10	6000	3/27	72	29.3	43.5	39.0	33.8*
Grouse Camp	20B11	5385	3/28	30	11.8	13.7	18.8	16.9*
High Creek	20B12	2930	3/28	0	0.0	0.0	0.0	--
Hyak	21B34	2600	3/11	15	6.3	17.4	--	--
			3/19	17	6.9	19.7	--	--
			3/28	16	7.6	20.4	--	--
Kachess Dam	21B38	2200	3/11	0	0.0	2.0	--	--
			3/20	0	0.0	0.0	--	--
			3/29	0	0.0	0.0	--	--
Kachess Peninsula	21B37	2280	3/11	29	10.0	14.4	--	--
			3/19	27	8.9	12.0	--	--
			3/28	29	12.0	11.6	--	--
Lake Cle Elum	21B14M	2200	4/1	0	0.0	0.0	10.7	8.1
Manashtash	20C1	3935	3/28	0	0.0	0.0	6.2	--
Morse Lake	21C17	5400	3/27	133	53.4	76.0	75.3	66.8*
Morgan Creek	21B40	2320	3/11	0	0.0	0.0	--	--
			3/20	0	0.0	0.0	--	--
			3/29	0	0.0	0.0	--	--
Nanum	21B39	2340	3/28	0	0.0	0.0	10.3	9.1*
#Olallie Meadows	21B2	3625	3/11	23	9.5	41.7	--	--
			3/20	30	11.0	45.6	--	--
			3/30	54	19.0	50.8	55.8	56.5
Salmon La Sac	21B39	2340	3/11	29	9.1	14.0	--	--
			3/19	22	8.0	17.2	--	--
			3/28	18	7.6	12.2	--	--
#Satus Pass	20D1	4030	3/28	0	0.0	2.7	18.9	--
Snoqualmie Pass	21B33SP	3020	Late Report			32.0	--	--

Not located directly on this drainage

* Adjusted 1948-62 average

APPENDIX 7

SNOW

DRAINAGE BASIN and SNOW COURSE			1968			PAST RECORD		
			Date of Survey	Snow Depth (in.)	Water Content (in.)	Water Content (in.)		
Name	No.	Elev				1967	1966	1948-62 Avg.

YAKIMA RIVER (Cont.)

#Stampede Pass	21B10	3000	3/11	31	14.5	48.6	31.1	--
			3/15	31	13.8	46.0	40.5	50.1*
			3/20	37	15.7	--	--	--
			4/1	56	21.5	52.2	43.1	52.9*
Trail Creek	20B14	3360	3/27	0	0.0	0.0	0.0	--
Tunnel Avenue	21B8	2450	3/11	24	8.2	14.5	--	--
			3/21	21	8.2	16.2	--	--
			3/28	20	7.4	17.3	25.4	29.3
Walters Flat	20B15	3360	3/28	0	0.0	0.0	6.3	5.5*
White Pass (E. Side)	21C28	4500	3/18	25	9.1	23.1	24.7	26.3*
			3/30	25	9.1	24.6	25.0	31.0*
White Pass (L. Lake)	21C27	4500	3/18	29	12.1	32.4	31.4	36.6*
			3/30	28	12.0	34.8	32.7	37.9*
Bumping Lake New	21C36	3400	3/14	29	12.1	New Course		
			4/1	23	10.7			

AHTANUM CREEK

Ahtanum R. S.	21C11	3100	3/28	0	0.0	0.0	9.5	5.6*
#Green Lake	21C10	6000	3/27	72	29.3	43.5	39.0	33.8*

LOWER COLUMBIA DRAINAGEASOTIN CREEK

Spruce Springs	17C4	5700	3/27	44	17.0	22.1	28.4	--
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MILL CREEK

Blue Mtn Camp	18D16	4300	3/28	3	0.8	9.5	16.2	--
Homestead	17C1	4030	3/28	0	0.0	7.1	15.2	8.0*
Martin Springs	17C2	4400	3/28	0	0.0	12.6	20.2	17.2*
Tollgate	18D3M	5070	3/28	11	3.3	24.2	26.9	--
Walla Walla Diversion	18D13	2400	4/1	0	0.0	0.0	0.0	0.0*
Weston Mountain	18D17	2700	3/28	0	0.0	0.6	0.0	--

Klickitat River

Satus Pass	20D1	4030	3/28	0	0.0	2.7	18.9	8.7*
West Fork Cabin	21C15	3000	Not Measured			--	15.7	9.5*

Not located directly on this drainage

* Adjusted 1948-62 average

APPENDIX 8

SNOW

DRAINAGE BASIN and SNOW COURSE			1968			PAST RECORD		
			Date of Survey	Snow Depth (in.)	Water Content (in.)	Water Content (in.)		
Name	No.	Elev.				1967	1966	1948-62 Avg.

WHITE SALMON RIVER

Cultus Creek	21C12	4000	3/30	75	29.9	51.6	59.6	54.0
#Surprise Lakes	21C13A	4250	3/30	70	29.0	58.3	60.0	58.8

WIND RIVER

Old Man Pass	21D19	3100	3/30	17	6.1	18.7	38.7	19.7*
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LEWIS RIVER

Blue Lake +	21C22a	4800	3/30	152	62.3	89.3	--	90.3*
Bob's Trail	21C21	2200	3/30	3	1.4	18.0	25.9	17.2*
Calamity Ridge +	22D1a	2500	3/30	0	0.0	4.0	15.7	--
Council Pass +	21C18a	4200	3/30	53	21.7	47.1	53.5	43.9*
#Cultus Creek	21C12	4000	3/30	75	29.9	51.6	59.6	54.0
Divide Meadow +	21C29a	5600	3/30	106	43.5	61.9	60.0	64.3*
Grand Meadow	21C25	3500	3/30	29	11.2	29.6	35.2	31.1*
Lone Pine Shelter	21C26	3800	3/30	81	33.5	49.6	63.5	46.3*
Marble Mountain +	22C5a	3200	3/30	13	6.4	41.4	63.5	39.8
#Mosquito Meadows	21C19	4100	3/30	90	37.9	50.0	63.4	50.0*
New Muddy River	22C6	1400	3/30	0	0.0	0.0	22.1	--
Old Man Pass	21D19	3100	3/30	17	6.1	18.7	38.7	19.7*
Plains of Abraham +	22C1a	4400	3/30	124	50.8	78.7	--	75.9
Smith Creek Road	22C4	2100	3/30	11	5.1	18.8	33.2	18.5*
Spencer Meadow +	21C20a	3400	3/30	0	0.0	32.8	49.1	26.7*
Surprise Lakes	21C13A	4250	3/30	70	29.0	58.3	60.0	58.8
Table Mountain +	21C24a	4200	3/30	70	28.7	53.8	59.1	52.8*
Timbered Peak +	21D18a	3000	3/30	0	0.0	29.1	38.8	25.4*

COWLITZ RIVER

Cayuse Pass	21C6	5300	3/30	169	64.9	100.8	88.6	96.2
Mosquito Meadows	21C19	4100	3/30	90	37.9	50.0	63.4	50.0*
Ohanapecosh	21C32	2200	3/30	0	0.0	13.6	22.7	17.4*
Packwood Lake	21C31	2870	3/30	0	0.0	14.2	20.3	15.7*
Pigtail Peak	21C33	5900	3/18	106	41.9	--	--	--
			3/30	121	44.7	70.2	55.2	--
#Plains of Abraham +	22C1a	4400	3/30	124	50.8	78.7	--	75.9
Potato Hill	21C14	4500	3/30	48	20.0	32.4	42.6	35.0*
#White Pass (E. Side)	21C28	4500	3/18	25	9.1	23.1	24.7	26.3*
			3/30	25	9.1	24.6	25.0	31.0*

Not located directly on this drainage

* Adjusted 1948-62 average

+ Snow water equivalent estimated from aerial stadia observations

APPENDIX 9

SNOW

DRAINAGE BASIN and SNOW COURSE			1968			PAST RECORD		
			Date of Survey	Snow Depth (in.)	Water Content (in.)	Water Content (in.)		
Name	No.	Elev.				1967	1966	1948-62 Avg.

COWLITZ RIVER (Cont.)

#White Pass (L. Lake)	21C27	4500	3/18	29	12.1	32.4	31.4	--
			3/30	28	12.0	34.8	32.7	--
Willame Creek	21C30	3250	3/30	23	7.9	38.0	42.2	37.3

PUGET SOUND DRAINAGENISQUALLY RIVER

Ghost Forest	21C4	4550	3/29	52	16.7	56.2	49.8	53.4*
Longmire	21C3	2760	3/29	0	0.0	14.2	16.2	11.1*
New Paradise Park	21C35	5500	3/29	107	40.6	83.2	63.4	--
Stem Glade	21C1	5050	3/29	123	42.4	82.4	65.6	80.2*

WHITE RIVER

#Cayuse Pass	21C6	5300	3/30	169	64.9	100.8	88.6	96.2
Corral Pass	21C13	6000	3/30	81	26.9	47.6	40.8	45.7*
#Morse Lake	21C17	5400	3/27	133	53.4	76.0	75.3	66.8*
White R. Campground	21C34	4000	Not Measured			33.1	32.6	--

GREEN RIVER

Airstrip	21B24	1800	3/31	0	0.0	0.0	0.0	--
Charley Creek	21B25	1200	3/31	0	0.0	0.0	0.0	--
Cougar Mountain	21B42SP	3200	3/30	--	2.2	New Course		
Snowshoe Butte	21B43SP	5000	3/31	100	31.5	New Course		
Grass Mtn No. 1	21B26	4000	3/31	17	5.7	26.5	34.0	29.9*
Grass Mtn No. 2	21B27	2900	3/31	5	2.5	22.5	35.7	28.3*
Grass Mtn No. 3	21B28	2100	3/31	0	0.0	2.2	5.2	--
Lester Creek	21B29	3100	3/31	32	12.8	25.4	30.0	31.1*
Sawmill Ridge	21B29	4700	3/31	57	17.2	46.8	38.8	49.9*
Stampede Pass	21B10	3000	3/11	31	14.5	48.6	31.1	--
			3/15	31	13.8	46.0	40.5	50.1*
			3/21	37	15.7	--	--	--
			4/1	56	21.5	52.2	43.1	52.9*
Twin Camp	21B30	4100	3/31	10	3.1	30.2	26.6	33.7*

CEDAR RIVER

City Cabin	21B3	2390	3/27	0	0.0	15.6	25.4	21.6
Mt. Gardner	21B21	3300	3/27	0	0.0	--	27.0	21.4*
Mt. Lindsay	21B16	2500	3/27	0	0.0	16.3	28.3	19.2*

Not located directly on this drainage

* Adjusted 1948-62 average

APPENDIX 10

SNOW

DRAINAGE BASIN and SNOW COURSE			1968			PAST RECORD		
			Date of Survey	Snow Depth (in.)	Water Content (in.)	Water Content (in.)		
Name	No.	Elev.				1967	1966	1948-62 Avg.

CEDAR RIVER (Cont.)

Mt. Washington	21B15	3000	3/27	2	0.8	7.7	21.0	8.2*
Rex River	21B17	2400	3/27	0	0.0	14.7	26.9	22.7*
S. F. Cedar	21B6	3000	3/27	3	1.1	20.4	29.0	29.5
Tinkham Creek	21B20	3400	3/27	4	1.4	18.7	35.0	25.7*

SNOQUALMIE RIVER

Bandera Air Strip	21B32	1635	3/11	0	0.0	0.0	--	--
			3/20	0	0.0	0.0	--	--
			3/30	0	0.0	0.0	--	--
#Lake Elizabeth	21B19	2900	3/28	44	18.4	53.3	61.6	48.0*
Olallie Meadows	21B2	3625	3/11	23	9.5	41.7	--	--
			3/20	30	11.0	45.6	--	--
			3/30	54	19.0	50.8	55.8	56.5
S. F. Tolt	21B18	1900	3/28	0	0.0	0.0	0.0	--

SKYKOMISH RIVER

Lake Elizabeth	21B19	2900	3/28	44	18.4	53.3	61.6	48.0*
#Stevens Pass	21B1	4070	3/11	58	22.1	50.8	48.0	50.4*
			3/26	60	23.0	58.8	46.3	55.4

SKAGIT RIVER

Beaver Cr. Trail	21A4	2200	3/30	31	10.8	16.7	18.6	15.5
Beaver Pass	21A1	3680	3/30	86	29.1	40.3	40.0	38.4
Devils Park	20A4	5900	3/30	141	46.1	55.9	39.7	47.5*
Freezeout Cr. Trail	20A1	3500	3/31	25	8.0	15.2	13.6	15.0
Freezeout Meadows	20A2	5000	3/31	74	27.0	34.7	34.5	35.6
#Harts Pass	20A5A	6500	3/30	136	48.8	53.3	40.5	49.6*
Klesilkwa	Canada	3700	4/2	13	3.5	18.8	11.7	16.4
Lake Hozomeen	21A2	2600	3/31	20	6.9	7.8	12.2	12.1*
#Lyman Lake	20A23A	5900	3/19	150	57.4	72.2	55.4	61.7
Meadow Cabins	20A8	1900	3/30	3	0.2	6.3	5.1	8.5
New Tashme	Canada	2500	4/1	5	1.3	11.1	9.6	11.6
Quartette Lake	Canada	4000	3/29	37	11.4	14.1	14.1	16.1*
#Rainy Pass	20A9	4780	3/30	120	41.0	50.1	34.9	42.5
Thunder Basin	20A7	4200	3/30	49	14.6	25.6	22.9	28.1

Not located directly on this drainage

* Adjusted 1948-62 average

APPENDIX 11

SNOW

DRAINAGE BASIN and SNOW COURSE			1968			PAST RECORD		
			Date of Survey	Snow Depth (in.)	Water Content (in.)	Water Content (in.)		
Name	No.	Elev.				1967	1966	1948-62 Avg.

BAKER RIVER

Dock Butte	21A11A	3800	3/31	132	53.2	87.8	78.1	87.4*
Easy Pass	21A7A	5200	3/31	181	78.7	104.3	89.3	104.3*
Jasper Pass	21A6A	5400	3/31	219	92.0	116.2	95.3	112.0*
Komo Kulshan	21A17	800	3/31	0	0.0	2.6	12.7	--
Marten Lake	21A9A	3600	3/31	151	59.2	97.2	89.3	95.2*
#Panorama	21A5	4300	3/9	121	51.0	91.5	77.8	--
			3/23	148	63.6	104.0	100.8	--
Rocky Creek	21A12A	2100	3/31	57	25.0	42.6	44.0	32.9*
Schreibers Meadow	21A10A	3400	3/31	122	54.2	81.6	75.6	79.1*
Sulphur Creek	21A13	1600	3/31	13	5.9	15.1	21.6	14.8*
Three Mile Creek	21A8A	4500	3/31	0	0.0	0.7	3.6	--
Watson Lakes	21A8A	4500	3/31	153	63.0	81.7	75.2	84.4*

NOOKSACK RIVER

Bald Mountain +	21A19a	4400	3/30	66	25.1	65.0	--	--
Canyon +	21A20a	5100	3/30	152	60.8	--	--	--
Glacier Creek	21A23	3700	3/31	25	7.5	32.0	--	--
Panorama	21A5	4300	3/9	121	51.0	91.5	77.8	87.3*
			3/23	148	63.6	104.0	100.8	96.4*
Twin Lakes +	21A21a	5200	3/30	178	71.2	--	--	--

O L Y M P I C P E N I N S U L A

DUNGENESS RIVER

Deer Park	23B4	5200	3/31	54	18.8	31.3	--	29.7*
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MORSE CREEK

Cox Valley	23B14		3/30	100	35.6	New Course		
Deer Park G. S.	23B13	4850	3/31	22	7.3	18.8	--	--
Morse Creek	23B12	5425	3/29	103	37.3	64.0	55.2	--

ELWHA RIVER

Hurricane	23B3	4500	3/28	65	19.2	35.0	34.6	33.1*
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Not located directly on this drainage

+ Snow water equivalent estimated from aerial stadia observations

* Adjusted 1948-62 average

APPENDIX 12

SNOW

DRAINAGE BASIN and SNOW COURSE			1968			PAST RECORD		
			Date of Survey	Snow Depth (in.)	Water Content (in.)	Water Content (in.)		
Name	No.	Elev.				1967	1966	1948-62 Avg.

SKOKOMISH RIVER

Black & White	23B7	4200	4/2	108	43.2	61.8	66.2	51.3*
Black & White Lakes	23B6	4700	4/2	133	57.1	86.5	84.8	71.3*
Four Streams	23B10	3000	4/2	73	34.4	45.0	54.7	--
Home Sweet Home	23B5	5200	4/2	182	74.8	102.0	90.8	87.0*
Sundown Pass	23B8	3900	4/2	144	60.6	81.4	91.7	71.3*

* Adjusted 1948-62 average

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Department of Lands, Forests and Water Resources,
Water Resources Service, British Columbia

States:

Washington State Department of Water Resources
Washington State Department of Natural Resources

Federal:

Department of the Army
Corps of Engineers
U. S. Department of Agriculture
Forest Service
U. S. Department of Commerce
Weather Bureau
U. S. Department of the Interior
Bonneville Power Administration
Bureau of Reclamation
Geological Survey
National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Walla Walla
City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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